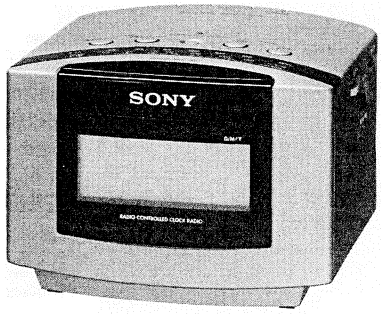
ICF-C50L

SERVICE MANUAL

UK Model

SONY-08199



SPECIFICATIONS

Time display	12hour

Frequency range:	
FM	87.5 – 108.0 MHz
MW	530 – 1605 kHz
LW	153 – 255 kHz

Speaker: Approx. 6.6 cm (2 5/8 inches) dia. 8 ohms.
Power output:
100mW (at 10% harmonic distortion)
Power requirements:
220 V – 230 V AC, 50 Hz
Dimensions: Approx. 133 x 91 x 140 mm (5 ⅜ x 3 ½ x 5 ½ inches) (w/h/d) incl. projecting parts and controls
Mass: Approx. 675g (1 lb 8 oz)

Design and specifications subject to change without notice.

FEATURES

- Radio Controlled Clock Auto Adjust System
- Dual alarm
- Sleep Function

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

MICROFILM

FM/MW/LW RADIO CONTROLLED CLOCK RADIO

SONY®

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SECTION 1
SERVICING NOTES

1-1. CHECK MODE OF LIQUID CRYSTAL DISPLAY PANEL

How to enter the check mode:
Press the [RADIO OFF] + [CLOCK] + [D.S.T. SUMMER T] keys simultaneously for more than 5 seconds, and the check mode is activated.
When the check mode becomes active, all LCD are tuned on, and each time a key is pressed, the display changes so that the LCD can be checked.

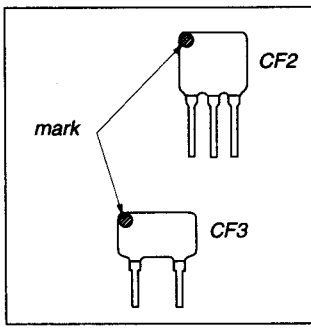
How to release the check mode:
Press the [RADIO OFF] key, and the normal mode is restored.

1-2. RESET OF SOFTWARE

Press the [CLOCK AUTO ADJUST] + [CLOCK] + [D.S.T. SUMMER T] keys simultaneously for more than 5 seconds, and the RAM is cleared and the software is initialized.

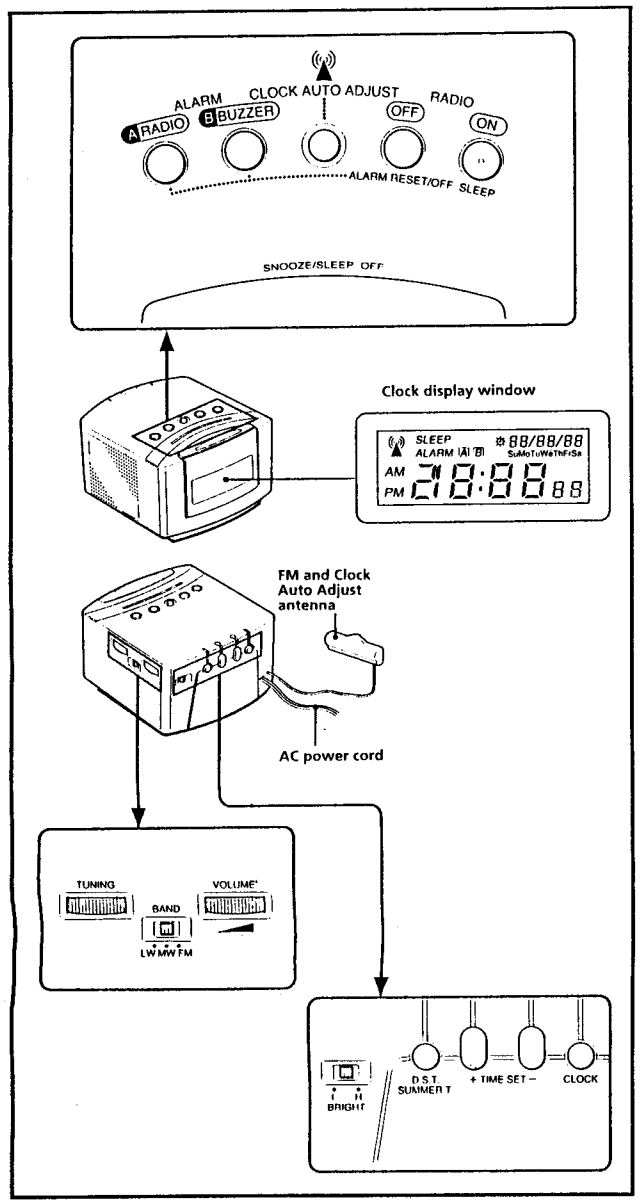
1-3. HOW TO CHANGE THE CERAMIC FILTERS

This model is used two ceramic filters of CF2, CF3.
You must use same type of color marked ceramic filters in order to meet same specifications.
Therefore, the ceramic filter must change two pieces together since it's supply two pieces in one package as a spare parts.



Mark	Center frequency
red	10.70MHz
blue	10.67MHz
orange	10.73MHz
black	10.64MHz
white	10.76MHz

This section is extracted from instruction manual.

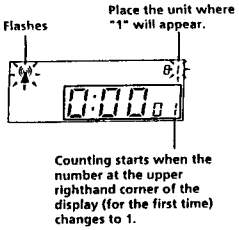


Setting the Clock and Date

Setting the Clock Automatically

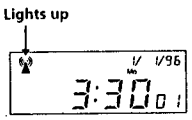
This radio has Radio Controlled Clock Auto Adjust System that adjusts to the current time. The Radio Controlled Clock Auto Adjust System receives the clock data (Year, month, date, hour, minute, second and D.S.T.) on a certain radio wave and radio controls the clock time.
Be sure to set the radio where reception would be easier.

1. Set the radio.
   Choose a place where there is good reception as possible.
2. Plug in the unit.
   The Clock Auto Adjust function will automatically operate and " " will flash in the display.


Flashes
Place the unit where "1" will appear.
Counting starts when the number at the upper righthand corner of the display (for the first time) changes to 1.

3. When the clock auto adjust has been completed, the clock will start to operate and " " will appear in the display.

   United Kingdom: 12 hour display;
   AM 12:00 = midnight
   Other Countries: 24 hour display;
   0:00 = midnight

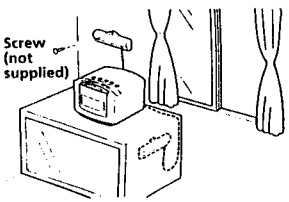


To stop Clock Auto Adjust during operation

Press **CLOCK AUTO ADJUST.**

For the customers in the United Kingdom

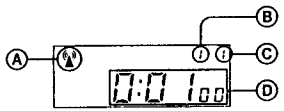
To improve reception
When the reception is poor, set the FM and Clock Auto Adjust antenna to a place and angle where the reception is much more stronger.



What is Clock Auto Adjust System?

The clock data that is sent has total of 60 units (this total unit is called 1 frame), the data is sent 1 unit for every second. This radio receives this data one by one from data No. 1 to data No. 60. When the radio receives the first frame and then starts to receive the second frame for confirmation. When the 2nd frame has been confirmed, then the clock time data reception has been completed. When the unit is plugged in, this function will operate until the time receives completely.

The Display during Clock Auto Adjust Mode



Ⓐ Reception indicator	Will flash during Clock Auto Adjust mode. Will appear when Clock Auto Adjust mode is completed.
Ⓑ Reception indicator (frame data)	1: 1 frame data when received 0: 1 frame data when not received
Ⓒ Reception indicator (unit data)	1: 1 unit data when received 0: 1 unit data when not received
Ⓓ Duration of Clock Auto Adjust mode	Maximum 10 hours displayed, even though the Clock Auto Adjust mode is not completed after 10 hours, the operation is still continued.

When the LCD display is difficult to see.

Change the Bright switch to either H (High) or L (Low) for better display.

About Radio Reception

The radio controlled signal is transmitted from the areas shown below.

England: Teddington, Middlesex
52° 22' N, 01° 11' W
Germany: Mainflingen
50° 0.1' N, 09° 00' E

- The U.K. models will receive the radio signal from England. The current time of England will be displayed.
- The other models will receive the radio signal from Germany. The current time of Germany will be displayed.
- There may be areas where radio reception is weak.

Once the Clock Auto Adjust has been completed

If the reception has not changed, you do not have to set the clock again.
The Clock Auto Adjust function will automatically operate everynight at AM 3:05 to keep the correct time. If the reception is incomplete after 12 minutes, the time setting will return to the original time and " " will disappear from the display.

If you want to Restart the Clock Auto Adjust

Press **CLOCK AUTO ADJUST.**
While the Clock is operating, " " will start to flash indicating that the Clock Auto Adjust function is operating. If the reception has been completed " " will be displayed and the clock time will change to the current time. If the reception is incomplete after 12 minutes, the time setting will return to the original time and " " will disappear from the display.

About Daylight Saving Time (summer time) indication

The changing of the summer time will be automatically changed by Clock Auto Adjust function. The change of summer time will have a time lag.
Winter Time → Summer Time: about 1 hour and 10 minutes time lag.
Summer Time → Winter Time: about 10 minutes time lag.
During the Summer Time mode " " will appear in the display.

To Change the Display to the Daylight Saving Time (summer time) Indication

Press **D.S.T.•SUMMER T.**
" " will appear and the time indication changes to the summer time.
To cancel the summer time indication, press **D.S.T.•SUMMER T.** button again.

Manual Setting the Clock

1. Press **CLOCK** for more than 1 second.
   The "Year" will start to flash in the display.
2. Press **TIME SET +** or **–** until the correct number appears in the display.
3. Press **CLOCK** once.
   The next category will flash in the display.
4. Repeat steps **2** and **3** to set the month, date, hour, minute.
   After setting the minute, press and release **CLOCK** to start the counting of the seconds.

Note

- If you stop during the clock setting , after about a minute the previous display will return.
- To set the current time exactly to the second, release the **CLOCK** with the radio or telephone time signal at step 4 (above).

Operating the Radio

1. Press **RADIO ON**.
2. Select **BAND** (**FM** or **AM** for ICF-C50, **FM**,**MW** or **LW** for ICF-C50L)
3. Tune in to a station using **TUNING**.
4. Adjust **VOLUME**.

• To turn off the radio, press **RADIO OFF**.

To Improve Radio Reception

FM: Extend the FM wire antenna to improve FM reception.
AM(MW)/LW: Rotate the unit horizontally for optimum reception. A ferrite bar antenna is built into the unit.

Setting the Alarm

You can set the radio alarm to **ALARM A**, and buzzer alarm to **ALARM B**.
To set the radio alarm, first tune in a station as described in "Operating the Radio" and adjust the volume.

1. Turn off the radio.
2. While holding down **ALARM A** or **B**, press **TIME SET** + or – until the desired time appears in the display.
   When you release **ALARM A** or **B**, the alarm setting is completed.

The radio or buzzer will automatically sound at the preset time, and automatically turn itself off after 60 minutes.

• To turn off the alarm manually, press **ALARM RESET/OFF**. The alarm will come on at the preset time on the next day.
• To cancel the alarm before the alarm time, while holding down **ALARM A** or **B**, press **ALARM RESET/OFF**.
• To check the preset time, press **ALARM A** or **B**.

Notes

• The buzzer sound level is fixed, and independent of the **VOLUME** control.
• If you set **ALARM A** and **ALARM B** to the same desired time, only **ALARM A** will work.
• Even if you are listening to the radio, you can set the radio or buzzer alarm.
• The alarm settings has a backup for about 10 minutes, when there is a service interruption for more than 10 minutes, the alarm setting memorys will be cancelled.

To Doze a Few More Minutes

1. Press **SNOOZE/SLEEP OFF**.
   The radio or buzzer will shut off but will automatically come on again after about 8 minutes. You can repeat this process as many times as you like.

• You can reset the alarm time while activating the snooze function.

To Use Both Sleep Timer and Alarm Function

You can fall asleep to the radio sound and you will be awakened by the radio or buzzer alarm at the preset time.

1. Set the alarm. (See "Setting the Alarm".)
2. Set the sleep timer. (See "Setting the Sleep Timer".)

Setting the Sleep Timer

By setting the sleep timer, you can fall asleep to the radio sound. The radio turns off after the selected time.

1. Press **SLEEP** repeatedly until the desired operating time is displayed.
   Each time you press **SLEEP**, the sleep timer indication changes as follows.

   On → 90 → 60 → 30
   ↳ OFF ← 15 ←┘

   After setting the Sleep Timer, the current time will appear.

• To turn off the sleep timer before the selected time has elapsed, press **SNOOZE/SLEEP OFF**.

Precautions

On Installation

• Try near a window or place the radio where the reception is better.
• Do not place the unit where the reception would become weak (as follows).
  — near a T.V., refrigerator, computer, etc.
  — on a steel table, steel shelf, and other steel objects.

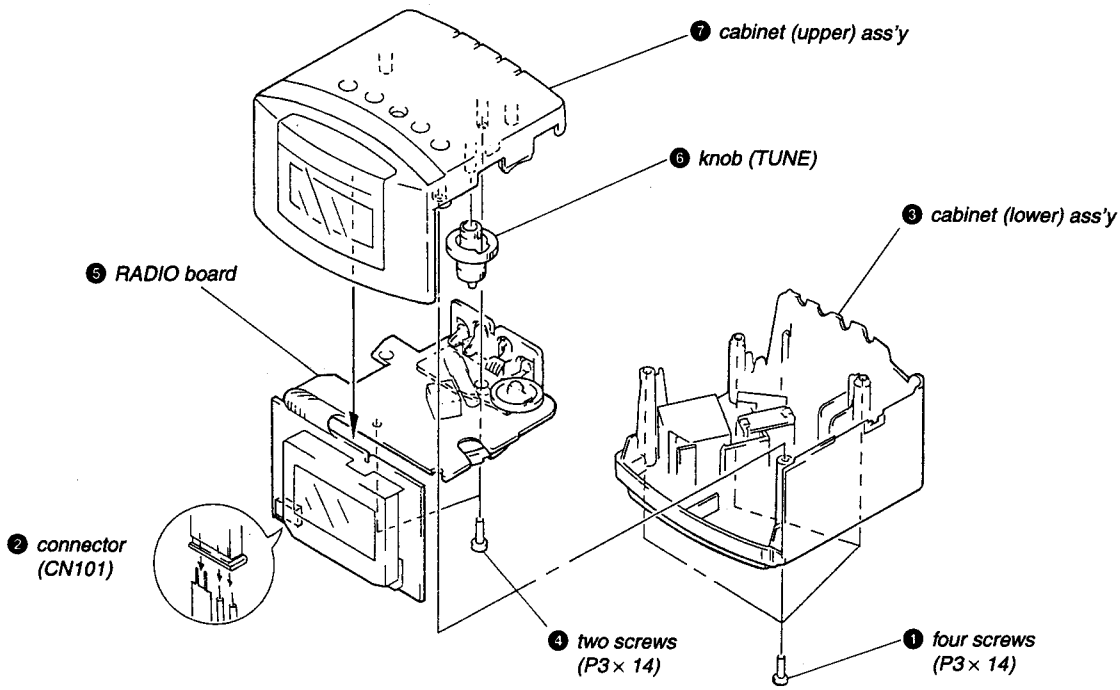
• Operate the unit on the power sources specified in "Specifications".
• The nameplate indicating operating voltage, etc. is located on the bottom exterior.
• To disconnect the power cord, pull it out by the plug, not the cord.
• Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that block the ventilation holes.
• Should anything fall into the unit, unplug the unit and have it checked by qualified personnel before operating it further.
• The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself is turned off.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

SECTION 3
DISASSEMBLY

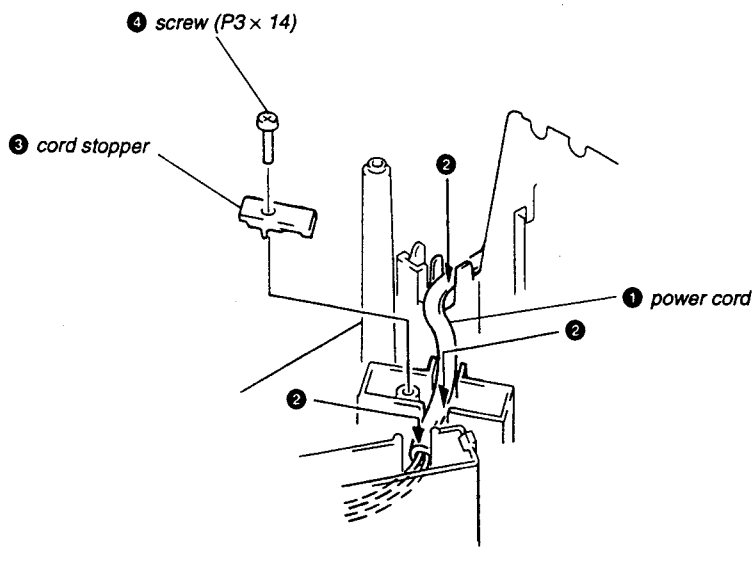
Note: Follow the disassembly procedure in the numerical order given.

CABINET (UPPER/LOWER) ASSY, RADIO BOARD



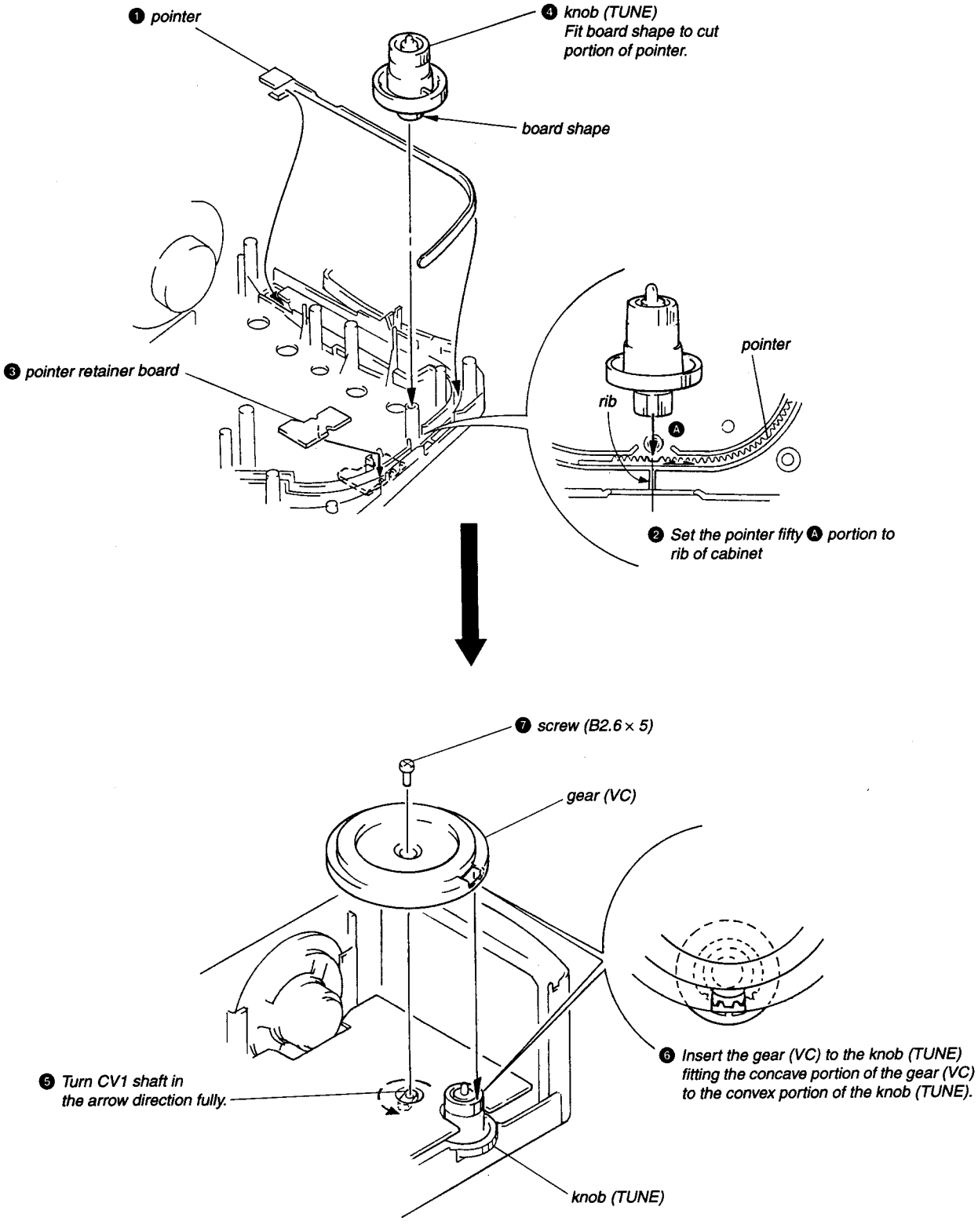
POWER CORD DRESSING

Note: Follow the assembly procedure in the numerical order given.



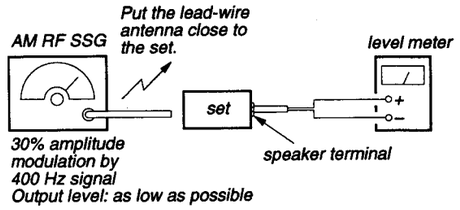
SECTION 4
DIAL POINTER SETTING

Note: Follow the assembly procedure in the numerical order given.

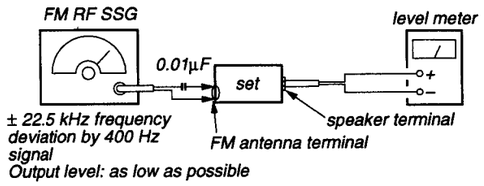

❶ pointer
❹ knob (TUNE)
Fit board shape to cut portion of pointer.
board shape
❸ pointer retainer board
pointer
rib
Ⓐ
❷ Set the pointer fifty Ⓐ portion to rib of cabinet
❼ screw (B2.6 × 5)
gear (VC)
❺ Turn CV1 shaft in the arrow direction fully.
❻ Insert the gear (VC) to the knob (TUNE) fitting the concave portion of the gear (VC) to the convex portion of the knob (TUNE).
knob (TUNE)

SECTION 5
ELECTRICAL ADJUSTMENTS

[MW/LW]
Setting:
BAND switch: MW/LW


AM RF SSG
Put the lead-wire antenna close to the set.
level meter
set
speaker terminal
30% amplitude modulation by 400 Hz signal
Output level: as low as possible

[FM]
Setting:
BAND switch: FM



Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	CT4
520 kHz	1,650 kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2 (MW side)	CT1
600 kHz	1,400 kHz

LW FREQUENCY COVERAGE ADJUSTMENT
Adjust for a maximum reading on level meter.
CT6
Frequency minimum

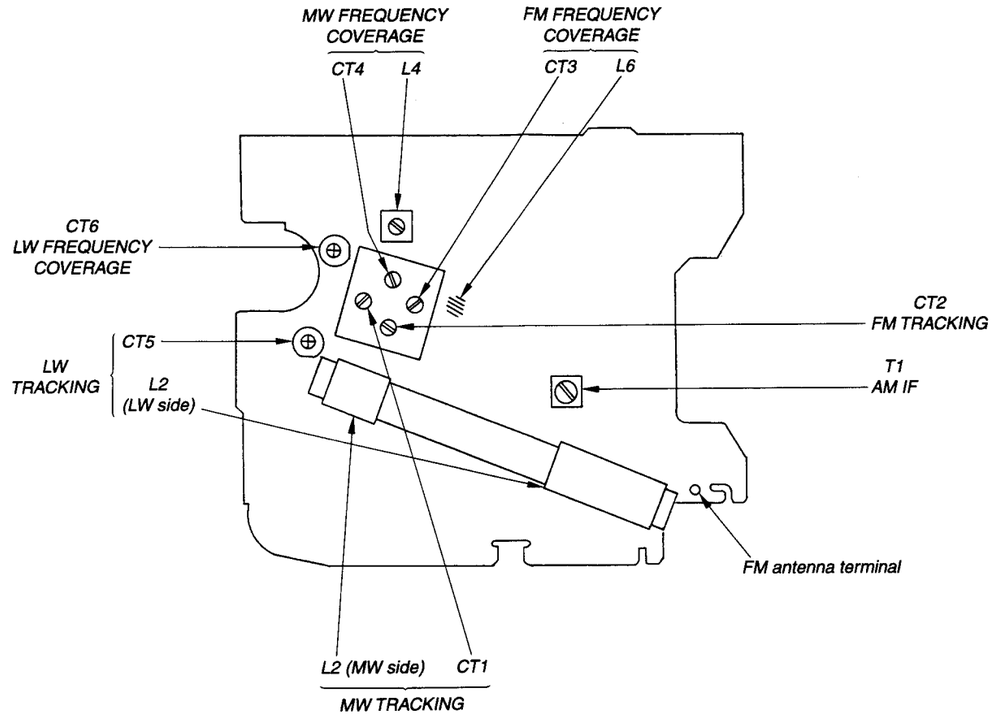
LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2 (LW side)	CT5
160 kHz	240 kHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L6	CT3
86.5 MHz	109.5 Hz

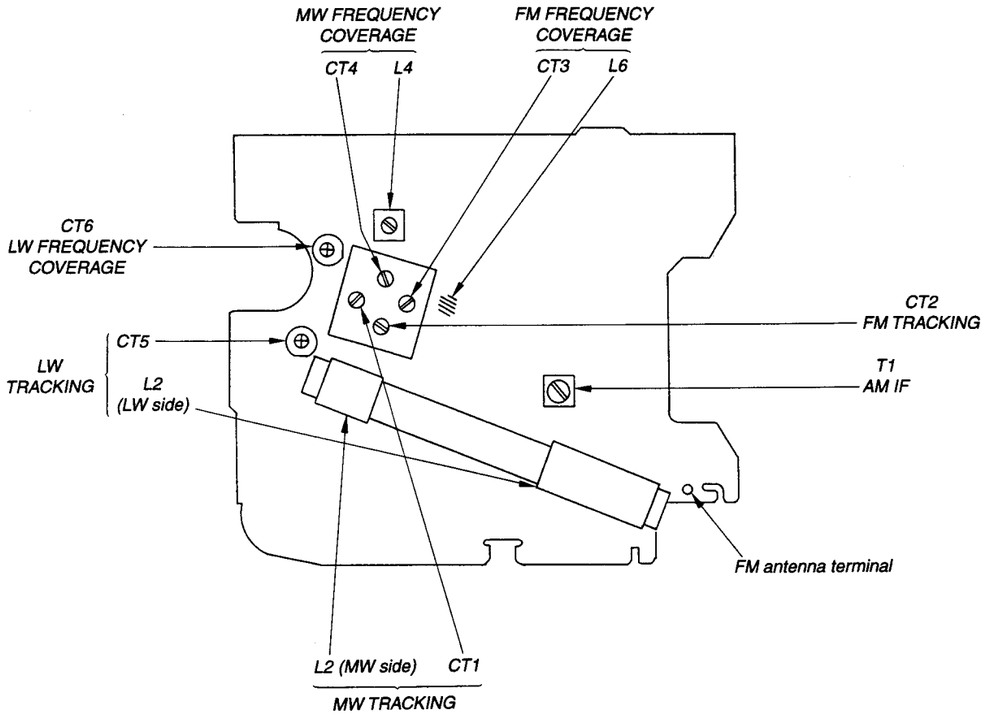
FM TRACKING ADJUSTMENT
Adjust for a maximum reading on level meter.
CT2
Frequency maximum

AM IF ADJUSTMENT
Adjust for a maximum reading on level meter.
T1
455 kHz

Adjustment Location: RADIO BOARD (Component Side)



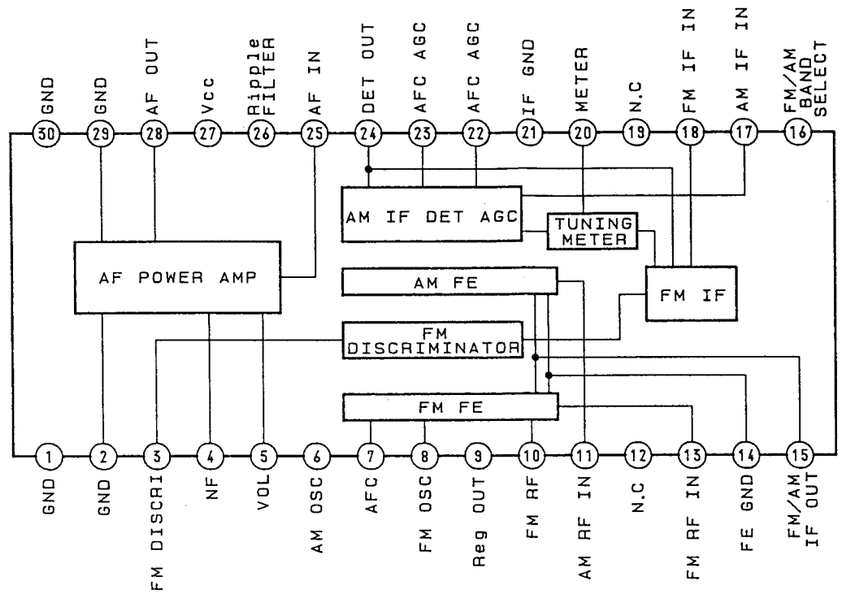
Adjustment Location: RADIO BOARD (Component Side)



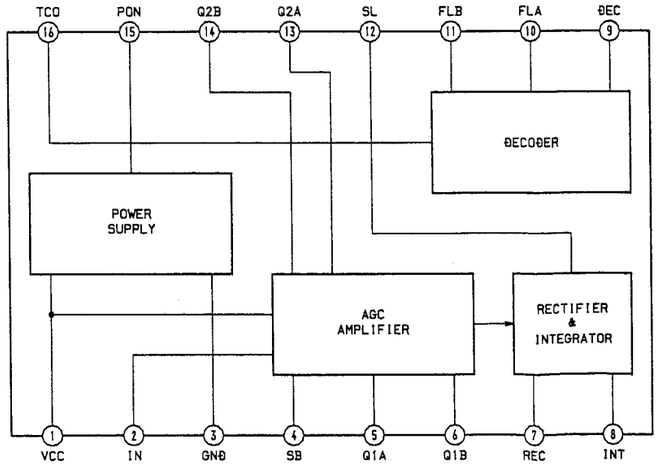
SECTION 6
DIAGRAMS

• IC Block Diagrams

IC1 CXA1019S



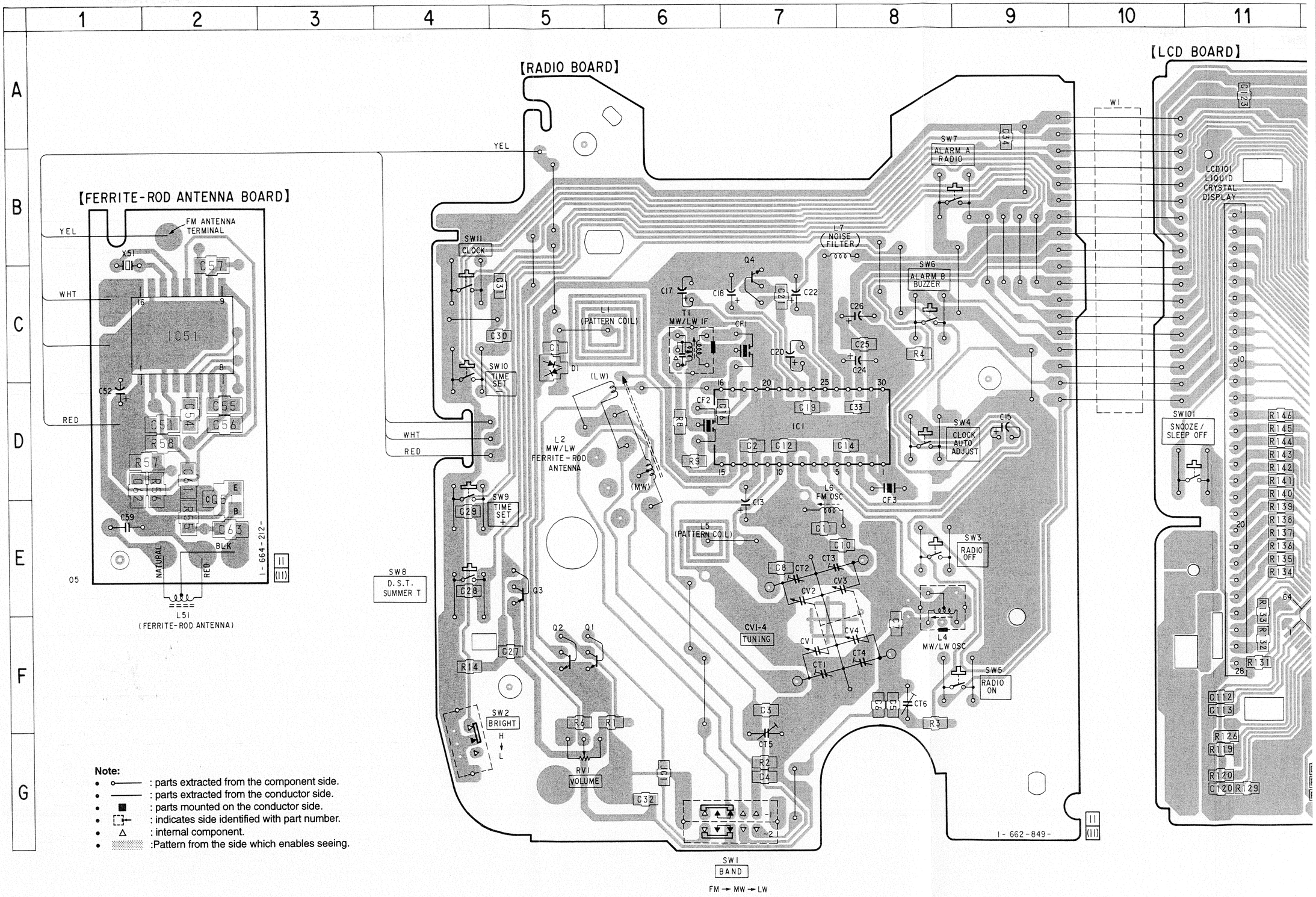
IC51 U4224B-CFLG3



6-1. PRINTED WIRING BOARDS

- **Semiconductor Location**

Ref. No.	Location
D1	C-5
D101	A-13
D102	A-12
D103	B-13
D104	B-13
D105	C-13
D106	D-13
D107	E-13
IC1	D-7
IC51	C-2
IC101	F-12
IC102	F-13
IC103	B-13
Q1	F-5
Q2	F-5
Q3	E-5
Q4	C-7
Q51	D-2
Q101	B-12
Q102	A-12



Note:

- ——o : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- : indicates side identified with part number.
- △ : internal component.
- : Pattern from the side which enables seeing.

5 6 7 8 9 10 11 12 13 14 15 16

【RADIO BOARD】

【LCD BOARD】

【TRANSFORMER (SECONDARY) BOARD】

【TRANSFORMER (PRIMARY) BOARD】

YEL

SW7 ALARM A RADIO

SW6 ALARM B BUZZER

L7 (NOISE FILTER)

Q4

C17 C18 C21 C22 C26

L1 (PATTERN COIL)

T1 MW/LW IF

CF1 C20 C25 C24 R4

D1 (LW)

CF2 C16 R8 R9

IC1

C2 C12 C14 C19 C33

SW4 CLOCK AUTO ADJUST

C15

L2 MW/LW FERRITE-ROD ANTENNA

(MW)

SW9 TIME SET +

L6 FM OSC

CF3 C13 C11 C10

L5 (PATTERN COIL)

SW3 RADIO OFF

CT3 CT2 CV3 CV2 CV4 CV1 CT4 CT1 C8

CVI-4 TUNING

L4 MW/LW OSC

SW5 RADIO ON

Q3 Q2 Q1

C27 C3 CT5 CT6 C5 C6 R3

SW2 RIGHT H L

R6 R1 RV1 VOLUME

R2 C4 C32

SW1 BAND FM → MW → LW

I-662-849-

W1

LCD101 LIQUID CRYSTAL DISPLAY

Q102 C103 D102 C124 R101 C101 D101 CN101

Q101

C123 C105 C121 C122 D103 D104

R117 D105 R114

R104 R105 R106 R107 R108 R109

SW101 SNOOZE/ SLEEP OFF

R146 R145 R144 R143 R142 R141 R140 R139 R138 R137 R136 R135 R134

R148 R150 R152 R154 R156 R158 R147 R149 R151 R153 R155 R157

R110 R112 R111 R113 R115 D106

D105-107 (LCD BACK LIGHT)

R133 R132 R131

■IC101

R116 D107

C112 C113 R126 R119 R120 C120 R129

C106 R122 R103 C109 C108 X101 X102 L100 C104

C119 C107 R123 R124 C118

R130 C125 ■IC102 R121 C116 C117 C114

I-662-850-

SP1

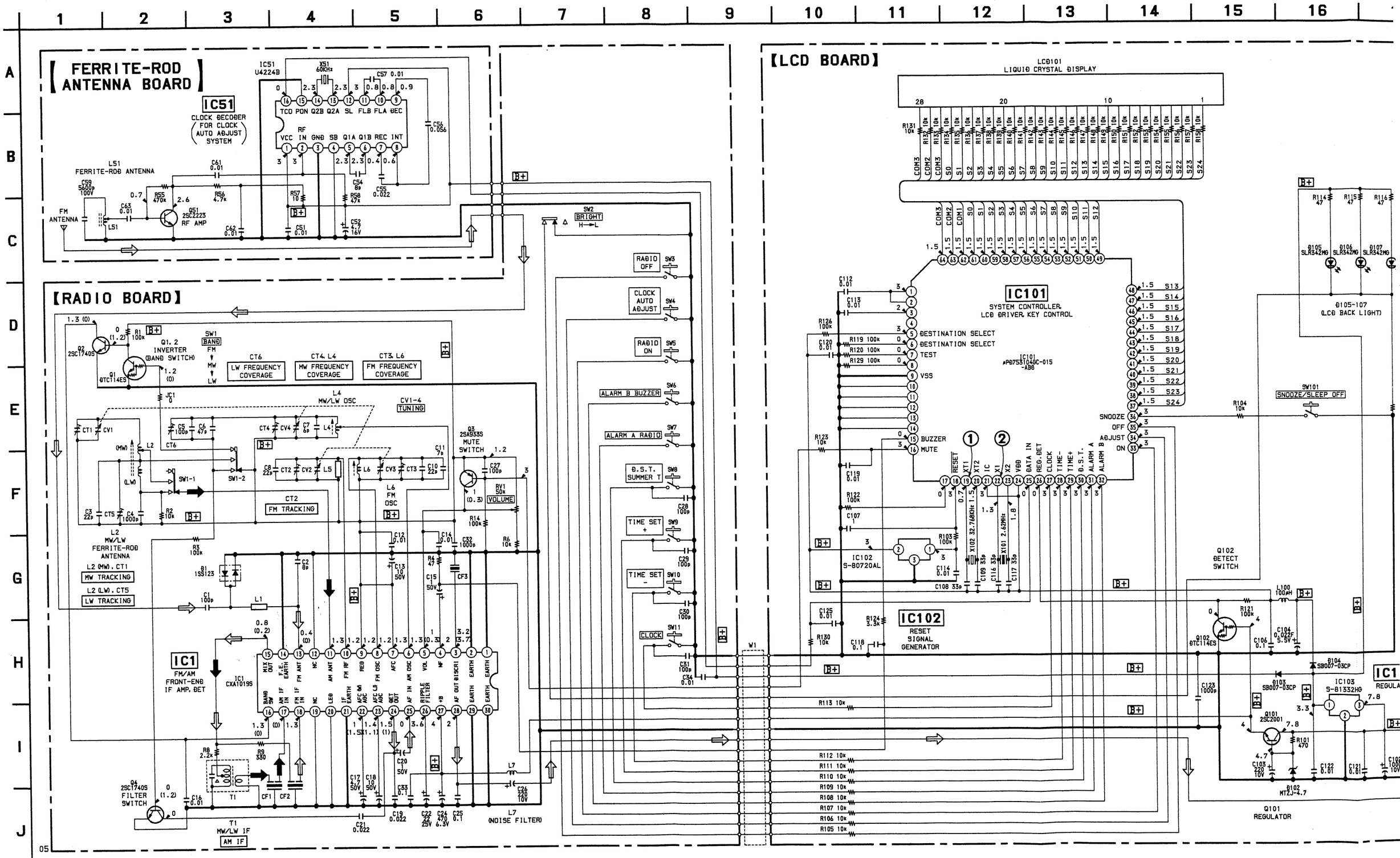
T101 POWER TRANSFORMER

I-662-855-

I-662-854-

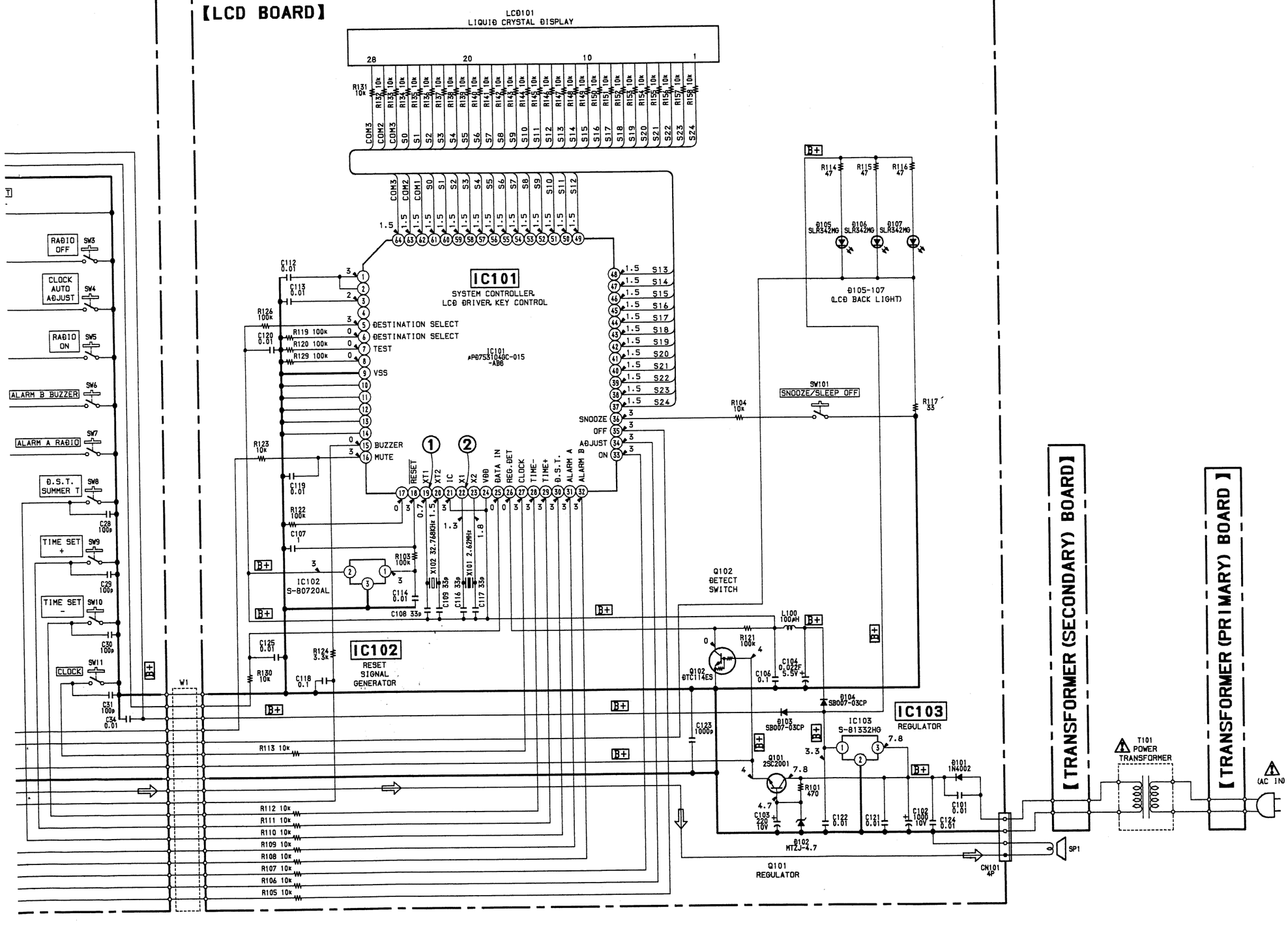
(AC IN)

6-2. SCHEMATIC DIAGRAM • See page 9 for IC Block Diagrams.



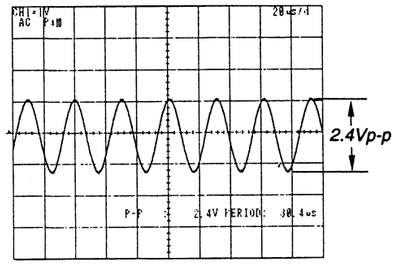
8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

【LCD BOARD】



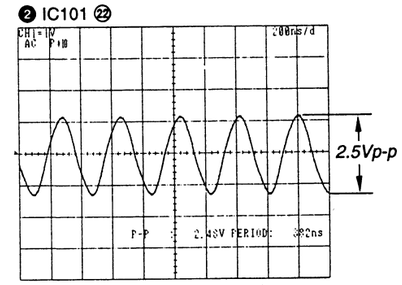
• **Waveforms**

❶ IC101 ⑱



32.768 kHz

❷ IC101 ㉒



2.62 MHz

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ⎓ : micro strip line.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : MW/LW
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : MW/LW

6-3. IC PIN FUNCTION DESCRIPTION

• LCD BOARD IC101 μPD753104GC-015-AB8 (SYSTEM CONTROLLER, LCD DRIVER, KEY CONTROL)

Pin No.	Pin Name	I/O	Function
1	—	—	Not used this set (Connected the capacitor)
2	—	—	Not used this set (Connected the capacitor)
3	—	—	Not used this set (Connected the capacitor)
4	—	—	Not used this set (Open)
5	DESTINATION SELECT	I	Destination select terminal Fixed at "H"
6	DESTINATION SELECT	I	Destination select terminal Fixed at "L"
7	TEST	I	Test terminal (Fixed at "L")
8	—	I	Not used this set (Fixed at "L")
9	VSS	—	Ground terminal
10	—	I	Not used this set (Fixed at "L")
11	—	I	Not used this set (Fixed at "L")
12	—	I	Not used this set (Fixed at "L")
13	—	I	Not used this set (Fixed at "L")
14	—	I	Not used this set (Fixed at "L")
15	BUZZER	O	Buzzer sound signal output
16	MUTE	O	Mute signal output
17	—	I	Not used this set (Fixed at "L")
18	$\overline{\text{RESET}}$	I	Reset signal input from the reset signal generator (IC102) Reset: "L"
19	XT1	I	Sub system clock input terminal (32.768 kHz)
20	XT2	O	Sub system clock output terminal (32.768 kHz)
21	IC	I	Connected to power supply (+3V)
22	X1	I	Main system clock input terminal (2.62 MHz)
23	X2	O	Main system clock output terminal (2.62 MHz)
24	VDD	—	Power supply terminal (+3V)
25	DATA IN	I	Serial data input from the clock decoder (IC51)
26	REG.DET	I	Power failure detection input Normally: "L", power failure: "H"
27	CLOCK	I	CLOCK key (SW11) input terminal
28	TIME –	I	TIME SET – key (SW10) input terminal
29	TIME +	I	TIME SET + key (SW9) input terminal
30	D.S.T.	I	D.S.T. SUMMER T key (SW8) input terminal
31	ALARM A	I	ALARM A RADIO key (SW7) input terminal
32	ALARM B	I	ALARM B BUZZER key (SW6) input terminal
33	ON	I	RADIO ON key (SW5) input terminal
34	ADJUST	I	CLOCK AUTO ADJUST key (SW4) input terminal
35	OFF	I	RADIO OFF key (SW3) input terminal
36	SNOOZE	I	SNOOZE/SLEEO OFF key (SW101) input terminal
37	S24	O	Segment (S24) drive signal output to the liquid crystal display (LCD101)
38	S23	O	Segment (S23) drive signal output to the liquid crystal display (LCD101)
39	S22	O	Segment (S22) drive signal output to the liquid crystal display (LCD101)

Pin No.	Pin Name	I/O	Function
40	S21	O	Segment (S21) drive signal output to the liquid crystal display (LCD101)
41	S20	O	Segment (S20) drive signal output to the liquid crystal display (LCD101)
42	S19	O	Segment (S19) drive signal output to the liquid crystal display (LCD101)
43	S18	O	Segment (S18) drive signal output to the liquid crystal display (LCD101)
44	S17	O	Segment (S17) drive signal output to the liquid crystal display (LCD101)
45	S16	O	Segment (S16) drive signal output to the liquid crystal display (LCD101)
46	S15	O	Segment (S15) drive signal output to the liquid crystal display (LCD101)
47	S14	O	Segment (S14) drive signal output to the liquid crystal display (LCD101)
48	S13	O	Segment (S13) drive signal output to the liquid crystal display (LCD101)
49	S12	O	Segment (S12) drive signal output to the liquid crystal display (LCD101)
50	S11	O	Segment (S11) drive signal output to the liquid crystal display (LCD101)
51	S10	O	Segment (S10) drive signal output to the liquid crystal display (LCD101)
52	S9	O	Segment (S9) drive signal output to the liquid crystal display (LCD101)
53	S8	O	Segment (S8) drive signal output to the liquid crystal display (LCD101)
54	S7	O	Segment (S7) drive signal output to the liquid crystal display (LCD101)
55	S6	O	Segment (S6) drive signal output to the liquid crystal display (LCD101)
56	S5	O	Segment (S5) drive signal output to the liquid crystal display (LCD101)
57	S4	O	Segment (S4) drive signal output to the liquid crystal display (LCD101)
58	S3	O	Segment (S3) drive signal output to the liquid crystal display (LCD101)
59	S2	O	Segment (S2) drive signal output to the liquid crystal display (LCD101)
60	S1	O	Segment (S1) drive signal output to the liquid crystal display (LCD101)
61	S0	O	Segment (S0) drive signal output to the liquid crystal display (LCD101)
62	COM1	O	Common (COM1) drive signal output to the liquid crystal display (LCD101)
63	COM2	O	Common (COM2) drive signal output to the liquid crystal display (LCD101)
64	COM3	O	Common (COM3) drive signal output to the liquid crystal display (LCD101)

NOTE:
• -XX and -
may have s
• Color Indic
KNOB, B/

●A: LCD bc

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LCD1(

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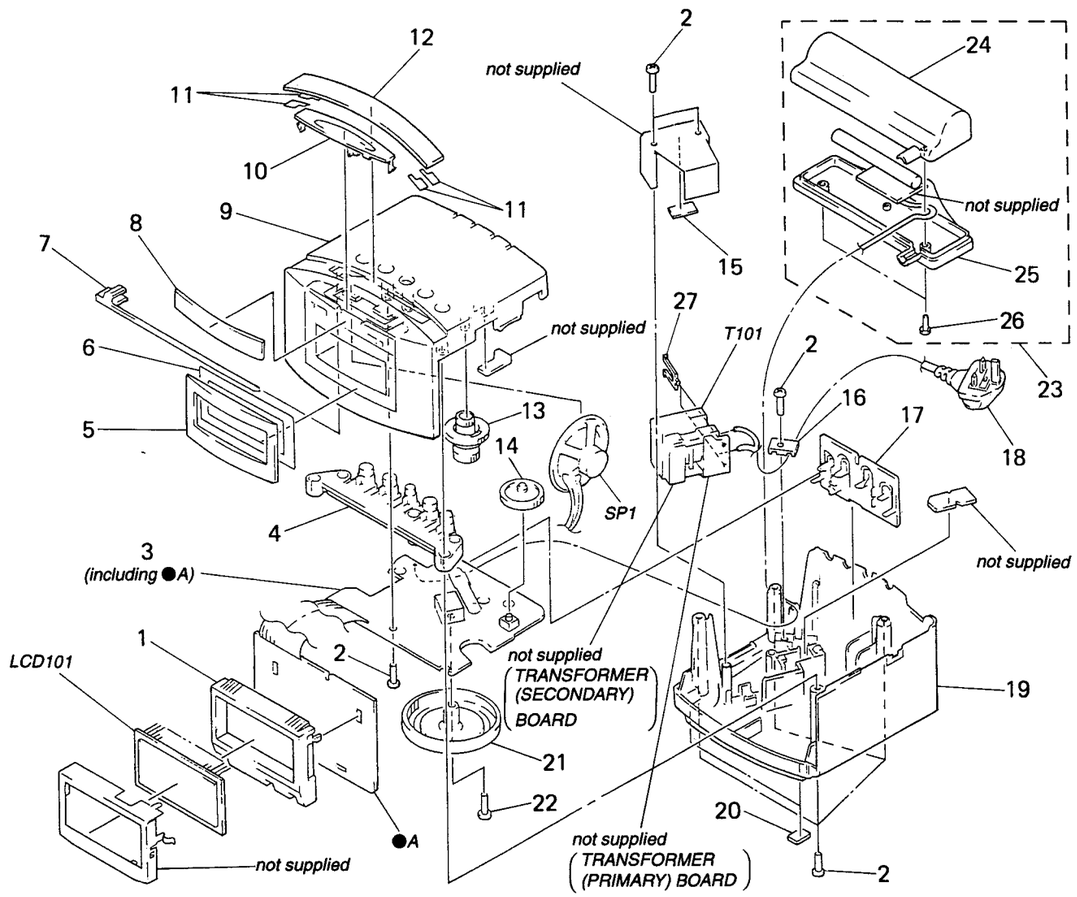
Pin No.	Pin Name	I/O	Function
40	S21	O	Segment (S21) drive signal output to the liquid crystal display (LCD101)
41	S20	O	Segment (S20) drive signal output to the liquid crystal display (LCD101)
42	S19	O	Segment (S19) drive signal output to the liquid crystal display (LCD101)
43	S18	O	Segment (S18) drive signal output to the liquid crystal display (LCD101)
44	S17	O	Segment (S17) drive signal output to the liquid crystal display (LCD101)
45	S16	O	Segment (S16) drive signal output to the liquid crystal display (LCD101)
46	S15	O	Segment (S15) drive signal output to the liquid crystal display (LCD101)
47	S14	O	Segment (S14) drive signal output to the liquid crystal display (LCD101)
48	S13	O	Segment (S13) drive signal output to the liquid crystal display (LCD101)
49	S12	O	Segment (S12) drive signal output to the liquid crystal display (LCD101)
50	S11	O	Segment (S11) drive signal output to the liquid crystal display (LCD101)
51	S10	O	Segment (S10) drive signal output to the liquid crystal display (LCD101)
52	S9	O	Segment (S9) drive signal output to the liquid crystal display (LCD101)
53	S8	O	Segment (S8) drive signal output to the liquid crystal display (LCD101)
54	S7	O	Segment (S7) drive signal output to the liquid crystal display (LCD101)
55	S6	O	Segment (S6) drive signal output to the liquid crystal display (LCD101)
56	S5	O	Segment (S5) drive signal output to the liquid crystal display (LCD101)
57	S4	O	Segment (S4) drive signal output to the liquid crystal display (LCD101)
58	S3	O	Segment (S3) drive signal output to the liquid crystal display (LCD101)
59	S2	O	Segment (S2) drive signal output to the liquid crystal display (LCD101)
60	S1	O	Segment (S1) drive signal output to the liquid crystal display (LCD101)
61	S0	O	Segment (S0) drive signal output to the liquid crystal display (LCD101)
62	COM1	O	Common (COM1) drive signal output to the liquid crystal display (LCD101)
63	COM2	O	Common (COM2) drive signal output to the liquid crystal display (LCD101)
64	COM3	O	Common (COM3) drive signal output to the liquid crystal display (LCD101)

SECTION 7
EXPLODED VIEW

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearrance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

●*A: LCD board*



Ref. No.	Part No.	Description	Remark
* 1	3-937-950-01	HOLDER (LCD)	
2	7-685-649-79	SCREW +P 3X14 TYPE2 NON-SLIT	
* 3	A-3662-650-A	RADIO BOARD, COMPLETE	
4	3-937-948-01	BUTTON (MAIN)	
5	3-937-951-01	PLATE, TRANSPARENT	
* 6	3-937-943-01	SHEET, ADHESIVE	
7	3-937-955-01	POINTER	
8	3-937-957-01	PANEL, FRONT	
9	3-937-946-02	CABINET (UPPER)	
10	3-937-956-01	BUTTON (SNOOZE) (SNOOZE/SLEEP OFF)	
* 11	3-007-061-01	SHEET (DIAL SCALE), ADHESIVE	
12	3-937-952-11	SCALE, DIAL	
13	3-937-953-01	KNOB (TUNE)	
14	3-368-840-41	KNOB (VOL)	
15	9-911-840-XX	CUSHION	

Ref. No.	Part No.	Description	Remark
* 16	3-884-408-00	STOPPER, CORD	
17	3-937-949-01	BUTTON (CLOCK)	
⚠18	1-769-578-11	CORD, POWER	
19	3-937-947-11	CABINET (LOWER)	
20	3-368-852-01	FOOT	
21	3-937-954-01	GEAR (VC)	
22	3-364-941-11	SCREW (+B) (2.6X5), NYLOK	
* 23	A-3638-414-A	CASE (BAR) ASSY	
* 24	3-008-422-01	CASE (BAR), UPPER	
* 25	3-008-423-01	CASE (BAR), LOWER	
26	3-318-203-31	SCREW (B1.7X8), TAPPING	
* 27	1-535-771-11	TERMINAL	
LCD101	1-801-471-11	DISPLAY PANEL, LIQUID CRYSTAL	
SP1	1-504-748-21	SPEAKER (6.6CM)	
⚠T101	1-450-923-11	TRANSFORMER, POWER	

FERRITE-ROD ANTENNA

LCD

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA. . : μA. . uPA. . : μPA. .
  uPB. . : μPB. . uPC. . : μPC. .
  uPD. . : μPD. .
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		FERRITE-ROD ANTENNA BOARD (not supplied)			
		**********			
		< CAPACITOR >			
C51	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C52	1-126-163-11	ELECT	4.7uF	20%	50V
C54	1-163-091-00	CERAMIC CHIP	8PF		50V
C55	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C56	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
C57	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C59	1-136-683-11	FILM	0.0056uF	5%	100V
C61	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C62	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C63	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< IC >			
IC51	8-759-435-84	IC U4224B-CFLG3			
		< COIL >			
L51	1-501-882-11	ANTENNA, FERRITE-ROD (LW)			
		< TRANSISTOR >			
Q51	8-729-102-07	TRANSISTOR 2SC2223-F13			
		< RESISTOR >			
R55	1-216-113-00	METAL CHIP	470K	5%	1/10W
R56	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R57	1-216-001-00	METAL CHIP	10	5%	1/10W
R58	1-216-089-00	METAL CHIP	47K	5%	1/10W
		< VIBRATOR >			
X51	1-767-219-21	FILTER, CRYSTAL (60 kHz)			
**********					
		LCD BOARD (INCLUDED RADIO BOARD)			
		*********			
		< CAPACITOR >			
C101	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C102	1-126-926-11	ELECT	1000uF	20%	10V
C103	1-126-923-11	ELECT	220uF	20%	10V
C104	1-125-691-11	DOUBLE LAYER	0.022F		5.5V
C106	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C109	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C112	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C113	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C114	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C116	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C117	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C120	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C121	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C122	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C124	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C125	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN101	1-580-183-11	SOCKET, CONNECTOR 4P			
		< DIODE >			
D101	8-719-052-88	DIODE 1N4002			
D102	8-719-921-37	DIODE MTZJ-4.7			
D103	8-719-941-04	DIODE SB007-03CP			
D104	8-719-941-04	DIODE SB007-03CP			
D105	8-719-989-83	LED SLR34MG3FN.P (LCD BACK LIGHT)			
D106	8-719-989-83	LED SLR34MG3FN.P (LCD BACK LIGHT)			
D107	8-719-989-83	LED SLR34MG3FN.P (LCD BACK LIGHT)			
		< IC >			
IC101	8-759-434-54	IC uPD753104GC-015-AB8			
IC102	8-759-281-70	IC S-80720AL-AX-T1			
IC103	8-759-085-76	IC S-81332HG-KC-T1			

LCD RADIO

Ref.No.	Part No.	Description			Remark
		< COIL >			
L100	1-410-521-11	INDUCTOR	100uH		
		< LIQUID CRYSTAL DISPLAY >			
LCD101	1-801-471-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q101	8-729-011-92	TRANSISTOR	2SC2001TP-K1K2		
Q102	8-729-900-80	TRANSISTOR	DTC114ES		
		< RESISTOR >			
R101	1-216-041-00	METAL CHIP	470	5%	1/10W
R103	1-216-097-00	METAL CHIP	100K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-073-00	METAL CHIP	10K	5%	1/10W
R107	1-216-073-00	METAL CHIP	10K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-017-00	METAL CHIP	47	5%	1/10W
R115	1-216-017-00	METAL CHIP	47	5%	1/10W
R116	1-216-017-00	METAL CHIP	47	5%	1/10W
R117	1-216-013-00	METAL CHIP	33	5%	1/10W
R119	1-216-097-00	METAL CHIP	100K	5%	1/10W
R120	1-216-097-00	METAL CHIP	100K	5%	1/10W
R121	1-216-097-00	METAL CHIP	100K	5%	1/10W
R122	1-216-097-00	METAL CHIP	100K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R126	1-216-097-00	METAL CHIP	100K	5%	1/10W
R129	1-216-097-00	METAL CHIP	100K	5%	1/10W
R130	1-216-073-00	METAL CHIP	10K	5%	1/10W
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-073-00	METAL CHIP	10K	5%	1/10W
R133	1-216-073-00	METAL CHIP	10K	5%	1/10W
R134	1-216-073-00	METAL CHIP	10K	5%	1/10W
R135	1-216-073-00	METAL CHIP	10K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-073-00	METAL CHIP	10K	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-073-00	METAL CHIP	10K	5%	1/10W
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W
R153	1-216-073-00	METAL CHIP	10K	5%	1/10W
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W
R155	1-216-073-00	METAL CHIP	10K	5%	1/10W
R156	1-216-073-00	METAL CHIP	10K	5%	1/10W
R157	1-216-073-00	METAL CHIP	10K	5%	1/10W
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< SWITCH >			
SW101	1-554-303-21	SWITCH, TACTILE (SNOOZE/SLEEP OFF)			
		< VIBRATOR >			
X101	1-579-825-11	VIBRATOR, CERAMIC (2.62MHz)			
X102	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
*	A-3662-650-A	RADIO BOARD, COMPLETE (INCLUDING LCD BOARD)			
		**********			
		< CAPACITOR >			
C1	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C2	1-163-091-00	CERAMIC CHIP	8PF		50V
C3	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C4	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C5	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C6	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C7	1-163-089-00	CERAMIC CHIP	6PF		50V
C8	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C10	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C11	1-163-700-11	CERAMIC CHIP	7PF	0.5PF	50V
C12	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C13	1-126-964-11	ELECT	10uF	20%	50V
C14	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C15	1-124-903-11	ELECT	1uF	20%	50V
C16	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C17	1-126-963-11	ELECT	4.7uF	20%	50V
C18	1-126-964-11	ELECT	10uF	20%	50V
C19	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V

Ref. No.	Part No.	Description			Remark
C20	1-124-903-11	ELECT	1uF	20%	50V
C21	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C22	1-128-551-11	ELECT	22uF	20%	25V
C24	1-126-935-11	ELECT	470uF	20%	6.3V
C25	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C26	1-126-923-11	ELECT	220uF	20%	10V
C27	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C28	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C29	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C30	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C31	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C32	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C34	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< FILTER >			
CF1	1-578-677-11	FILTER, CRYSTAL			
CF2	1-579-632-51	FILTER, CERAMIC			
CF3	1-579-632-51	FILTER, CERAMIC			
		< TRIMMER >			
CT5	1-141-443-11	TRIMMER, CERAMIC			
CT6	1-141-443-11	TRIMMER, CERAMIC			
		< VARIABLE CAPACITOR >			
CT1-4	1-141-529-11	CAP, VAR			
CV1-4	1-141-529-11	CAP, VAR (TUNING)			
		< DIODE >			
D1	8-719-800-76	DIODE 1SS226			
		< IC >			
IC1	8-752-037-02	IC CXA1019S			
		< CHIP CONDUCTOR >			
JC1	1-216-295-00	CONDUCTOR, CHIP (2012)			
		< COIL >			
L2	1-402-276-11	ANTENNA, FERRITE-ROD (MW/LW)			
L4	1-406-028-00	COIL, OSC (MW)			
L6	1-428-222-11	COIL, AIR-CORE (FM OSC)			
L7	1-424-122-11	FILTER, NOISE			
		< TRANSISTOR >			
Q1	8-729-900-80	TRANSISTOR DTC114ES			
Q2	8-729-119-78	TRANSISTOR 2SC403SP-51			
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q4	8-729-119-78	TRANSISTOR 2SC403SP-51			
		< RESISTOR >			
R1	1-216-097-00	METAL CHIP	100K	5%	1/10W
R2	1-216-073-00	METAL CHIP	10K	5%	1/10W
R3	1-216-097-00	METAL CHIP	100K	5%	1/10W
R4	1-216-017-00	METAL CHIP	47	5%	1/10W
R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
R8	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R9	1-216-037-00	METAL CHIP	330	5%	1/10W
R14	1-216-097-00	METAL CHIP	100K	5%	1/10W
		< VARIABLE RESISTOR >			
RV1	1-241-542-11	RES, VAR, CARBON 50K (VOLUME)			
		< SWITCH >			
SW1	1-572-949-11	SWITCH, SLIDE (BAND)			
SW2	1-571-850-91	SWITCH, SLIDE (BRIGHT)			
SW3	1-554-303-21	SWITCH, TACTILE (RADIO OFF)			
SW4	1-554-303-21	SWITCH, TACTILE (CLOCK AUTO ADJUST)			
SW5	1-554-303-21	SWITCH, TACTILE (RADIO ON)			
SW6	1-554-303-21	SWITCH, TACTILE (ALARM B BUZZER)			
SW7	1-554-303-21	SWITCH, TACTILE (ALARM A RADIO)			
SW8	1-554-303-21	SWITCH, TACTILE (D.S.T. SUMMER T)			
SW9	1-554-303-21	SWITCH, TACTILE (TIME SET +)			
SW10	1-554-303-21	SWITCH, TACTILE (TIME SET -)			
SW11	1-554-303-21	SWITCH, TACTILE (CLOCK)			
		< TRANSFORMER >			
T1	1-404-902-21	TRANSFORMER, IF			
		< FLAT CABLE >			
W1	1-765-726-11	CORD, CONNECTION 18P			

****

MISCELLANEOUS

****

⚠18	1-769-578-11	CORD, POWER
* 27	1-535-771-11	TERMINAL
LCD101	1-801-471-11	DISPLAY PANEL, LIQUID CRYSTAL
SP1	1-504-748-21	SPEAKER (6.6CM)
⚠T101	1-450-923-11	TRANSFORMER, POWER

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-856-647-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, DUTCH, GERMAN, ITALIAN)	
*	3-937-938-01	INDIVIDUAL CARTON	

9-923-909-31

Sony Corporation
Personal & Mobile Communication Company

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ICF-C50L

SONY

AEP Model

SERVICE MANUAL

SUPPLEMENT-1

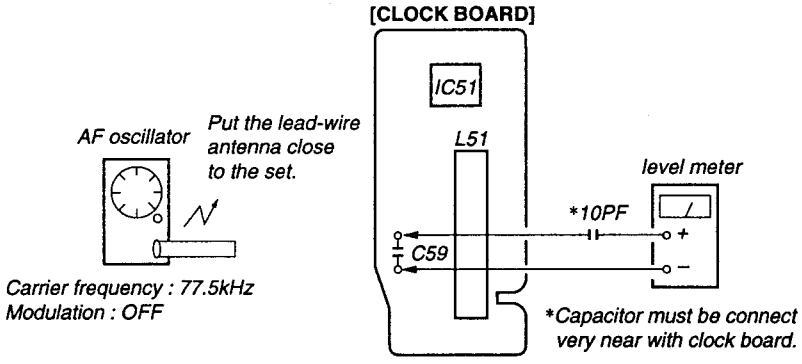
File this supplement with the service manual.

Subject: Antenna Adjustment (L51)

(ENG-97003)

[ANTENNA ADJUSTMENT]

Setting:



Procedure :

1. To adjust L51 coil for level meter's output to be maximum.
2. To confirm tracking condition by tracking bar.
   (* If you do not have tracking bar, you can omit this process.)
3. Fix L51 by wax.
   (Re-melt wax by solder iron)

9-923-909-81

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